



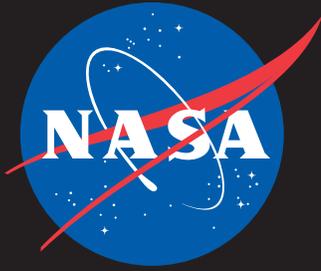
IT Talk

July - September 2017

Volume 7 • Issue 3



Tech Trends



IT Talk

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Office of the CIO

NASA Headquarters

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Message from the NASA CIO

At NASA, we continue to look for new ways to keep up with the times, not to mention technology trends. How will we work in 5 years, 10 years, or longer? Will it be mobile devices or something else? Will you have a cube or an office? Virtual working is becoming more of a norm, so every day we are seeing more employees working from anywhere.

In this issue, we will explore new ways we will work in the future and what that may mean for our CIO community.

We will also discuss IT security. Every employee must do his/her part to protect data. If you lose your Government smartphone, iPad, or laptop, what would go through your mind first? Someone now has access to all my important videos or photos?

What should go through your mind is that someone now has access to all your work files and can do real damage to harm NASA. NASA takes the issue of IT security very seriously, and we have made significant progress in better protecting the Agency's IT systems. In this issue, we will take a look at some tips to help you safeguard your data better.

Finally, congratulations to the Jet Propulsion Laboratory IT Directorate. The team was recently recognized with a few prestigious industry honors. We will highlight some of those accomplishments.

Happy reading!

~Renee



NASA CIO F2F; KSC, Florida
18-20 April 2017
CIOs and Deputies

Top Row (L to R): Dan Conway, Keith Bluestein, Dennis Vandertuig, Victor Thompson, Dana Mellerio, Dennis Groth, Annette Moore, Greg Brierly, David Walters, Rob Binkley
Middle Row (L to R): Steve Guy, Sean Gallagher, Jeanne O'Bryan, Catherine Prohaska, Neil Rodgers, Danny Harvill, Terry Jackson, Mike Witt, John McDougle, Faith Chandler, Louise Moroney
Front Row (L to R): John Sprague, Jeff Seaton, Sean McMorrow, Leigh Anne Giraldi, Renee Wynn, Dinna Cottrell, Grace DeLeon, Vanessa Stromer, Beth Beck, Rob Powell

NASA OCIO Receives Blue Marble Award

The Office of the Chief Information Officer (OCIO) received the Blue Marble Award at the 2017 NASA Environ-

mental Conference held at Johnson Space Center (JSC) on April 4, 2017. John Sprague, Deputy Associate CIO

for Technology and Innovation, gave a summary brief to the conference before receiving the Group Environmental Quality Award for the OCIO. A certificate, signed by the acting NASA Administrator, Robert Lightfoot, is also being presented to representatives of the International Space Applications Challenge Team. The award was recognition for numerous environmental projects to benefit NASA, the United States, and the world.



Pictured: Mike McNeill, Deputy Director for the Environmental Division at NASA Headquarters; John Sprague, representing OCIO; and James Leatherwood, Director for the Environmental Division. Photo courtesy of Johnson Space Center.

Hackers Do Not Take Spring Breaks or Summer Vacations—Cybersecurity Training Is Taken Seriously at Goddard!

By Hillary Gamble, Strategic Communications Specialist, Goddard Space Flight Center

When the days get longer, the flowers start to bloom, and the grills are fired up, that can mean only two things: spring is here, and it is time for all Goddard Space Flight Center (GSFC) employees, both contractors and civil servants, to complete their annual cybersecurity awareness training. While many Goddard employees will enjoy a spring break or summer vacation, hackers will not take a break at all. Even during time off and teleworking, following good cybersecurity practices is essential to keeping NASA safe. At Goddard, we take that seriously.

With great power comes great responsibility. At Goddard, we are connected to some of the most powerful machines and scientific data in the world. It is the duty of civil servants and contractors working at the center to protect all equipment and information that are owned by the Federal Government. NASA, in particular, is home to some of the most valuable

data in the world, comprised of data transmitted from outer space and cutting-edge science research, making its protection even more important. This is why NASA requires all employees to complete cybersecurity training on an annual basis.

The FY 2017 Cybersecurity and Sensitive Unclassified Information Awareness Training teaches all NASA employees and contractors about the importance and best practices of cybersecurity. The training is designed to educate employees about the dangers of lackadaisical cybersecurity practices and ways to go above and beyond to protect both themselves and NASA. Through this training, Goddard employees will learn about such topics as teleworking, phishing, mobile device usage, foreign travel, privacy, and much more. Being able to understand these topics and implement the best practices associated with them is essential for protecting NASA data from

getting into the wrong hands.

To improve the impact of Goddard's Annual Cybersecurity Awareness Training Program, the Cybersecurity Services and Integration Division (CSID) began offering multiple modes of training this year. Traditionally, Goddard has only offered an online version of the training; however, this year, CSID introduced live training, offering employees an opportunity to have an interactive session with cybersecurity experts. This live training has garnered significant interest, with over 200 Goddard employees attending the first session alone. Since then, multiple sessions have been held, with increased interest in each session.

Once considered an afterthought at NASA, cybersecurity is now a mission-critical operation. At Goddard, we make sure to do our part to protect all of the wonderful and innovative work done at NASA!

IT Security Tips

By Meredith Isaacs, Communications Specialist, Headquarters

Protect Your NASA Devices From Loss or Theft

DID YOU KNOW that NASA end users report more than one device as lost or stolen per day? Devices include laptops, desktops, tablets, storage devices, servers, smartphones, RSA tokens, and cell phones.

Each time an end user's device is lost or stolen, NASA's Security Operations Center (SOC) investigates the incident. Security teams work to protect NASA, as well as personnel, from security risks and data breaches.

REMINDER: Be mindful when storing and sharing personally identifiable information (PII), sensitive but unclassified (SBU) information, international traffic in arms regulations (ITAR) information, and other sensitive information by following NASA's guidelines, available at <https://inside.nasa.gov/itsd/information-privacy-protection-cui>.

As the number of devices used daily increases, so has their capacity to store data. Laptops, smartphones, and RSA tokens are most often reported missing, but all lost devices incur costs for investigation, mitigation of data breaches, and replacement.

PREVENTION: There are several simple ways to protect NASA devices from loss or theft.

- Secure devices when away from workstations and lock all mobile items overnight.
- When commuting or traveling, routinely account for each device, especially when transferring to and from planes, cars, and rail.
- Avoid leaving devices in vehicles for long durations; short-term, they may be locked in trunks.
- Never leave devices exposed in a parked car!
- International travelers need permission from their Center's CIO office before traveling with NASA's devices. These users may receive temporary devices for international trips.

REPORT IT: Disclose all device loss or theft, within 1 hour of discovery, to the NASA SOC (soc@nasa.gov or 1-877-627-2732). Additional reporting to the device manager or local police, if stolen, may be required.

Help NASA limit loss!

Keeping Mobile Device Software Up-to-Date

"SOFTWARE UPDATE AVAILABLE": These important mobile phone and tablet updates contain timely security fixes and bring beneficial upgrades, including increased battery life and improved app performance. Immediately installing updates on NASA-issued mobile devices protects NASA's networks from harm.

All updates are delivered by the wireless carrier and are not distributed by Agency device managers. Follow the instructions in the box below to check for, and install, updates.

For assistance updating mobile devices, contact the Enterprise Service Desk (<https://esd.nasa.gov> or 1-877-677-2123, Option 2).

Cybersecurity begins and ends with you!

UPDATE STEPS

- **Apple:** Go to Settings > General > Software Update. Any available updates will appear. Click Install Now.
- **Android:** Launch the Settings app from your Home screen, tap System > About Device > Software Updates > Check for updates > OK. If your device needs to be updated, it will find the latest update, and you can follow the onscreen instructions to download and install the software.
- **Windows phone:** From the Home screen, tap Settings > Phone Update > Check for Update > Download.
- **BlackBerry 10:** From the Home screen, swipe down from the top of the screen. Tap Settings > Software Updates > Check for Updates > Update (if an update is available). For other BlackBerry models, refer to the Web site for instructions: <https://us.blackberry.com/software/smartphones/update/blackberry10-os>.

HTTPS Compliance

The White House Office of Management and Budget (OMB) mandated that all public Federal Websites and Web services use hypertext transfer protocol secure (HTTPS) encryption for the privacy and security of visitors and content owners.

NASA's Office of the Chief Information Officer's (OCIO) HTTPS Tiger Team has achieved more than 95 percent compliance and was leading other Federal agencies. We appreciate the NASA team's hard work and dedication!

NASA's Strategy

The HTTPS Tiger Team, established in June 2016, tackled the OMB M-15-13 mandate affecting approximately 3,700 systems. Upgrading NASA's sites and services to a more secure protocol was a high priority, not only to ensure secure experiences for our users, but also to protect NASA's data with the highest protocol standards currently available.

Why HTTPS?

HTTPS represents the most secure protocol, but the Web largely runs over unencrypted HTTP. Without the encryption, any data sent using only HTTP, including information shared between the user's browser and the Web site, may be accessed by outside parties. In the case of NASA, encryption is critical for logins, user IDs, passwords, data exchanges, research, and patent data.

For more about HTTPS and NASA, visit:

- <https://inside.nasa.gov/NASA-Achieves-OMB-M-15-13-Compliance>
- <https://18f.gsa.gov/2017/05/25/from-launch-to-landing-how-nasa-took-control-of-its-https-mission/>.



The Most Important Technology Trends, Part 2

By Tom Soderstrom, IT Chief Technology and Innovation Officer, Jet Propulsion Laboratory, California Institute of Technology

This is the second article in a series about the most important technology trends. The first article postulated that the key trend is the evolution of how we work. It discussed working like a start-up and utilizing new methods of working, including agile development, open-source, consumerization, continuous development/continuous integration, iterating with minimum viable products, DevOps, crowdsourcing, maker communities, and reducing wait states.

This article focuses on the key technologies that will deliver maximum benefits, especially when used together. Over the next three years, to work even faster and more effectively, we will use new, natural user interfaces to easily and seamlessly interact with previously unimaginable amounts of data in the cloud, from real-time sensors created through the Internet of Things (IoT). We will make data-driven decisions in real time, aided by complex algorithms that help make sense of the data through artificial intelligence (AI). And we will proactively measure everything through predictive and prescriptive analytics.

The way we interact with the computing systems will change. Today, we work using a mouse and keyboard; we must have knowledge of what data we

need, request permission, and then use a keyboard and mouse to access and (often painfully) combine data from different sources. It is extremely labor-intensive, and, because of the many wait states, it is too easy to lose the ever-important momentum and not deliver on time.

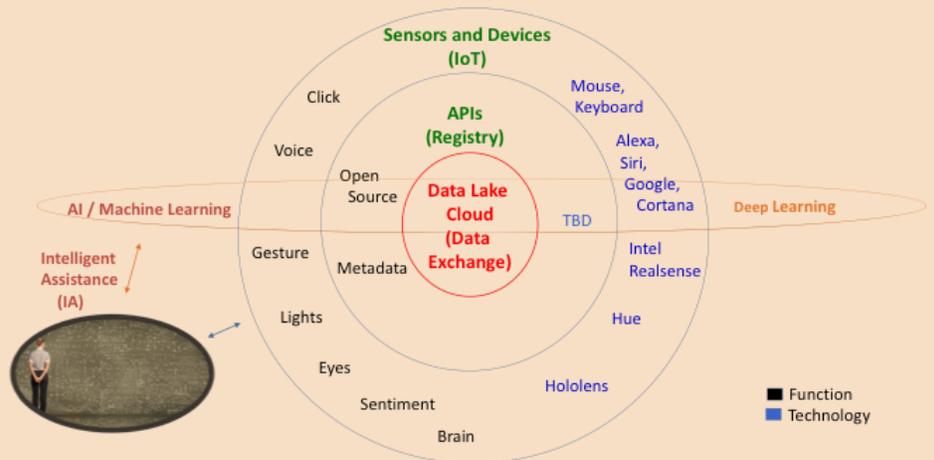
Tomorrow, we will simply use a natural interface to query the system and receive an answer in seconds. As illustrated in Figure 1, a scientist, engineer, programmer, or other stakeholder will simply ask a question using her/his voice, gesture to the camera, touch

the data on a large touch-screen, blink through the smart glasses, and/or think about the problem wearing a smart “helmet,” and the answer will appear. If we are successful, it will seem like AI magic.

So, what’s behind the scenes of this magic? The data will reside in clouds and be accessible through well-known APIs (Application Programming Interface). The stakeholder’s questions will kick off a set of database queries and/or AI code that presents the solutions to the user. Note that the system intelligently assists the human by presenting

Fig 1. A Vision of How We Will Work

Leverages IOT, Programming, Smart Data, Cloud, and Artificial Intelligence



the data in the way that the user wants it and specifying the likelihood that the answer is correct. The user then chooses the action. This is the essence of Intelligent Assistance (IA).

IA will evolve to AI at the user's desired pace. Once the user trusts the IA recommendations, she/he can choose to trust the system to implement the recommendation automatically. At that point, we have reduced an additional wait state and have evolved to true AI for that user and for that use case.

There are many current and future examples. Today, AI software called AEGIS runs on Curiosity. While Curiosity is driving on Mars, AEGIS automatically identifies interesting rocks and tells Curiosity to take photos, which are then sent to Earth. Humans can investigate them using augmented reality through Microsoft's HoloLens Smart Glasses and ask Curiosity to turn around to drill into the rock. (See Figure 2.)

If this sounds too simple...we are on the right track. AI is complicated, and many people fear it. However, no one fears Alexa, Siri, or Cortana because of the apparent simplicity and because the software is simply advising the human, who takes the action. Hence the emphasis on IA.

What technologies are needed for us to execute this vision? The Jet Propulsion Laboratory (JPL) has experimented with all of the following technologies and have found them both promising and useful.

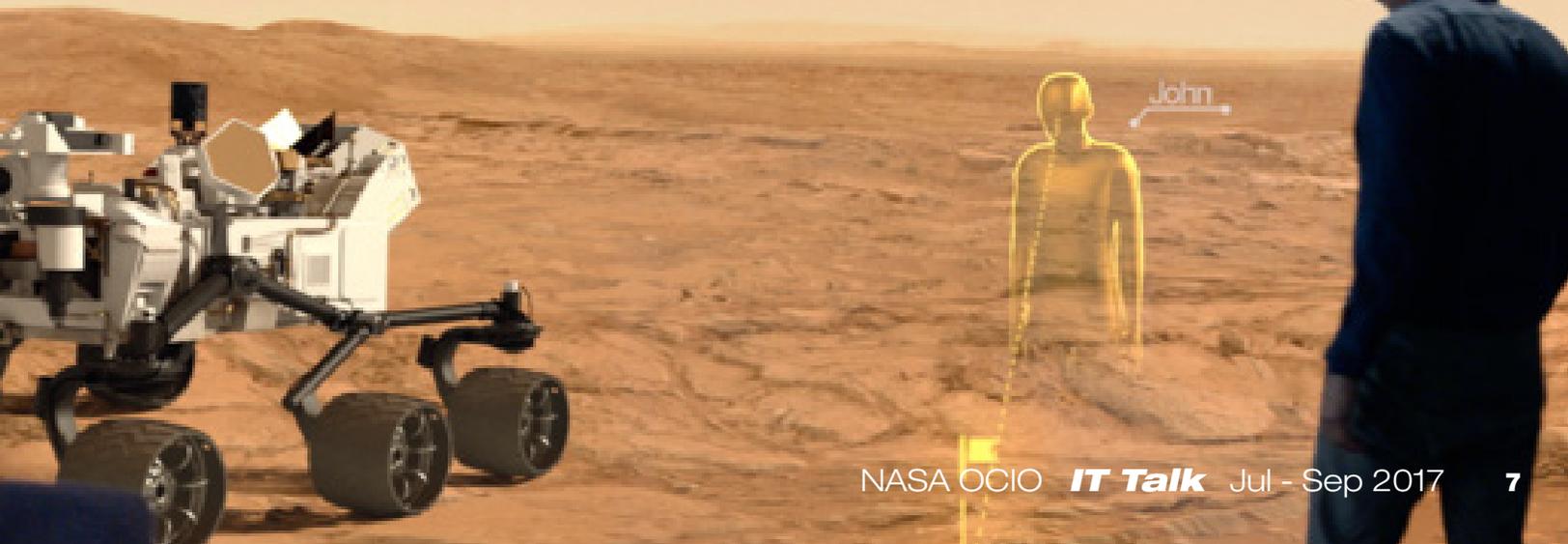
1. Open-source and commercial analytics tools. They are readily available, inexpensive, growing, and evolving quickly.
2. Cloud computing. This includes the related technologies of advanced and unlimited computing and storage, serverless computing, edge computing, containers, microservices, API management, etc. The list will continue to grow.
3. Crowdsourcing. We will partner more within and between NASA Centers and externally to organizations such as Kaggle for data science and analytics.
4. Internet of Things. IoT will allow us to automatically collect highly relevant data, gain automated situational awareness, and interact in an easy, natural way with any system.
5. AI frameworks and libraries. We can choose from available open-source options and run the calculations in the cloud. Examples include Tensorflow from Google, MxNet from Amazon, Cognitive Toolkit from Microsoft, Torch, Caffe, Keras, DeepLearning4J, Theano, and many more.
6. IA. By focusing on the user over the technology, we will employ Intelligent Assistance as a way to infuse AI while enabling human end-users to set the pace of infusion.

How can we deploy these technologies?

1. Question Farm. Iterate quickly with end-users to find low-hanging use cases.
2. Experiment. Try the minimum viable product quickly with users and developers using small teams.
3. Focus on the data. Ensure that the data are accessible, consumable, reusable, and understandable.
4. Build in cybersecurity. Ensure that the solutions and the data are appropriately secured.
5. Take the quick, easy path. If we cannot get access to the data, we will drop this experiment. Instead, we will do the prototypes/experiments that show value with minimum wait states. We will also make it easy for the users by making the solutions easy to understand, build, and (re)use.
6. Measure everything. Is there enough end-user value to continue with this experiment?
7. Double down. If the experiment showed value and had an impact, we will iterate quickly.

Whether you think this is the right approach or think that it is complete and utter hype, we would love to hear from you about how we can help NASA answer the big questions that affect all of humanity. Next in the series, I will discuss IA and AI in more detail and would appreciate hearing about your potential or actual use cases.

Fig 2. Virtual Mars Exploration



2017 NASA STI Program/NISA Face-to-Face at Kennedy Space Center

By Vincent Whitfield, Communications Specialist, NASA Langley Research Center

Kennedy Space Center (KSC) graciously hosted the first combined NASA Scientific and Technical Information (STI) Program and NASA Information Services Alliance (NISA) Face-to-Face from May 1-5, 2017. The event brought together STI managers, NASA librarians, and Document Availability Authorization (DAA) representatives from all ten Centers.

Together, the STI Program and NISA help to maintain the robustness of NASA's information sciences; the STI Program establishes and implements technical publishing policy for the Agency, ensuring that STI is acquired, processed, disseminated, promoted, and archived via both a registered and a public system (NASA Technical Reports Server). NISA ensures that all NASA employees—and in some cases the public—have seamless and timely access to information resources, services, and tools, regardless of their geographic location.

In addition to sharing knowledge and best practices from their respective

fields, the Face-to-Face is an opportunity for the STI Program and NISA to launch new initiatives; this year, the STI Program unveiled its new Strategic Plan and Vision Statement. "I am extremely energized with our vision and plan for the Program," said Jennifer Perez, NASA STI Program Manager.

The first day of the Face-to-Face included both groups and took place at KSC's Apollo Saturn V Facility. Content included presentations by Jennifer Perez, STI Program Manager; Karen Fallon, STI Program Deputy Manager; Kate Dunlap, NISA Chair; and Beth Beck, who welcomed attendees on behalf of the Agency Office of the Chief Information Officer (OCIO).

On the second and third days, the STI Program and NISA parted ways to focus on individual workshops specific to each group. The location for these events was KSC's Operations Support Building (OSB) II. The venue's fifth-floor terrace was a popular choice for photographs because it provided excellent views of the Vehicle Assembly Building

(VAB), which has housed the Apollo Program, Space Transportation System, and Commercial Crew Program launch vehicles.

On the fourth and final day of the Face-to-Face, KSC staff provided attendees with an exclusive VIP tour of the Center. The tour included popular highlights such as the Space Shuttle Atlantis exhibit at the KSC Visitor Center, as well as guided tours of the KSC Launch Control Rooms and a trip to Launch Complex 39 (complete with a visit to the world-famous "Alligator Pond").

The STI Program and NISA teams have already started planning for next year's Face-to-Face and hope to build upon the strategic focus-areas identified during this year's event.

Find out more about the NASA STI Program at <https://www.sti.nasa.gov/>.

For research support from NISA, visit <https://askalibrarian.nasa.gov/>.



Photo caption: NASA STI Managers and DAA Representatives from across the Agency take in views of KSC's Vehicle Assembly Building

Photo Credit: NASA KSC/Sandra Joseph

Taking Photography to New Heights

By the Image Science and Analysis Group at Johnson Space Center

The Image Science and Analysis Group personnel at Johnson Space Center are experts in video photogrammetry, the extraction of 3D data from 2D imagery. Imagery has long been used to observe and measure the behavior of space hardware in a variety of engineering tests, both on the ground and in space.

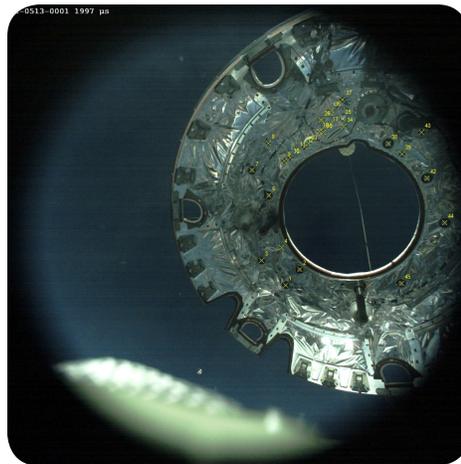
The Orion Crew Capsule, under development by NASA and Lockheed Martin, has a Forward Bay Cover that measures approximately 9 feet in diameter. This cover protects the capsule's landing parachutes. The Image Science and Analysis Group uses photogrammetry to measure the position and attitude of the Forward Bay Cover as it is jettisoned from the capsule in engineering tests conducted on the ground, during parachute drop tests, and during uncrewed exploration flight tests.

The positioning of four synchronized high-speed video cameras on platforms surrounding a Forward Bay Cover attached to a simulated parachute compartment for a ground jettison test allows the lightning-quick ejection of the cover to be observed step-by-step from multiple perspectives. Customized targets placed on the cover are tracked with specialized commercial software to determine the 3D position and 3D orientation of the cover for the half-second ground test. Subtle but significant image distortions from each camera lens are measured and removed from the results. The final data reveal the speed and acceleration of the cover and confirm to engineers that the cover has not made accidental contact with any part of the simulated parachute compartment.

Whether during parachute drop tests conducted at 35,000 feet above the Yuma Proving Grounds in Arizona or immediately after the fiery reentry of the Exploration Flight Test One capsule over the Pacific Ocean, the best view of the jettison of the Forward Bay

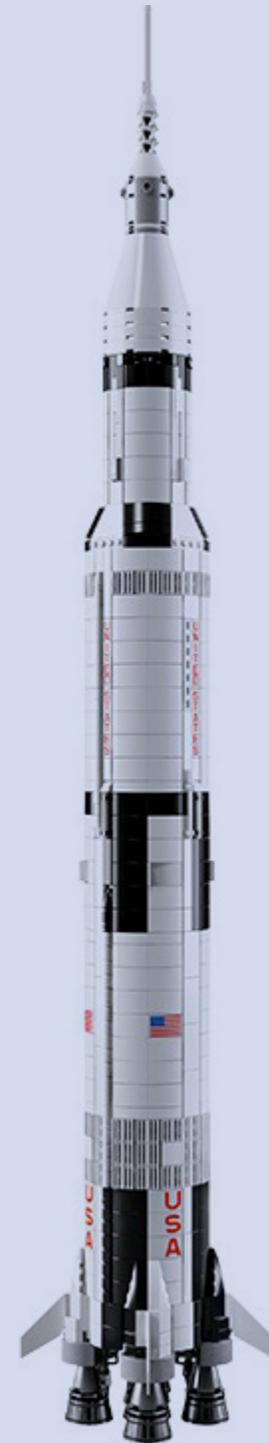
Cover is from a single camera mounted underneath it. Taking 500 images per second, this camera views the cover and a set of specially sized and distributed targets affixed to its underside as it launches off the vehicle. The targets range in diameter from 0.25 centimeters to 8 centimeters. By tracking them as they briefly come into view and then shrink in apparent size, observers can calculate the position and orientation of the entire cover during jettison. This single-camera photogrammetric method is not as precise as a multicamera analysis, but it provides valuable data when there are no other options.

This expertise in photogrammetry, garnered from years of experience in the Space Shuttle Program, is also applied to a steady stream of tasks for the International Space Station. These include the calculation of structural clearances, dynamic response of solar arrays to orbital reboost thruster firings, and trajectories of jettisoned hardware. These calculations are often made using imagery from cameras never intended for such a purpose, without specialized targets and no preparation. As NASA moves into future operations with commercial crew and the exploration space gateway/transportation vehicles, the Image Science and Analysis Group foresees a continuing need for utilizing photogrammetry techniques to derive engineering data from imagery.



LEGO Apollo Saturn V

The wait is over! LEGO recently unveiled the NASA Apollo Saturn V design. At slightly over 3 feet, the Saturn V rocket is the tallest LEGO Ideas set ever, and it contains the most elements (pieces)—1,969 elements.





JPL CIO, IT Directorate, Recognized with Industry Honors

By Whitney Haggins, IT Communication Strategist, Jet Propulsion Laboratory, California Institute of Technology

The Jet Propulsion Laboratory (JPL) IT Directorate and CIO were recently recognized with industry honors.

On May 1, Jim Rinaldi, JPL Chief Information Officer and Director for Information Technology, was announced as a 2017 CIO Hall of Fame inductee by IDG's *CIO* magazine. Rinaldi is the only person representing a Federally Funded Research and Development Center or NASA to be a part of 2017's Hall of Fame class. *CIO* also announced JPL as a 2017 CIO 100 honoree. The CIO 100 recognizes the top 100 organizations for their business and technology innovation. The selection marks JPL's sixth consecutive appearance on the CIO 100. The 2017 CIO Hall of Fame inductees and CIO 100 honorees will be profiled in the magazine's August issue and honored at a gala event during the CIO 100 Symposium to be held August 14–16 in Colorado Springs, CO.

On June 12, JPL was named one of IDG's *Computerworld* 2017 Best Places to Work in IT. JPL was ranked third among large companies. The selection marks JPL's fifth consecutive appearance on the list, an annual ranking of the top 100 work environments for information technology professionals by *Computerworld*. This year's list, the 24th annual edition, is compiled based on a comprehensive questionnaire regarding company offerings in categories such as benefits, career development, training, and retention. In addition, *Computerworld* conducts extensive surveys of IT workers, and their responses factor heavily in determining the rankings.

Jim Rinaldi said, "I'm absolutely thrilled that the JPL IT organization is again recognized for the hard work, determined effort, and excellent results that contribute to JPL's success. I am very proud to be a part of a wonderful team in an amazing place."

BSA Corner

By Meredith Isaacs, Communications Specialist, Headquarters

It takes many people to implement the IT Business Services Assessment (BSA). Throughout this process, project leaders rely heavily on leadership, OCIO staff, program offices, and Center personnel for the development, review, coordination, and execution of a variety of tasks.

In this issue, we thank all of the hard-working employees who have been involved in IT BSA implementation, as well as those who will become part of this journey before it is complete. So thank you to our information technology communities, leadership, and IT customers. We view IT as a strategic resource and hope you do too.

Our Community

The Agency's IT community has shouldered many hours of implementation, from early data calls to executing programs and projects. For example, security teams have been realizing a new security architecture through Continuous Diagnostics and Mitigation (CDM) program deployment on Agency systems and workstations and configuring CDM output into the Risk Information Security Compliance System (RISCS).

Some staff members have been instrumental in the formulation and review of program plans, the data center architecture, policies, and memoranda, among various projects. Others are preparing for the future, including implementing strategic sourcing, educating customers, and developing a collaboration tools suite.

Our Leadership

Our successes, like greater portfolio insight, cost avoidance and savings, and IT security advancements, required guidance as well as leaders accepting new roles and challenges.

New governance boards have incorporated leadership from the OCIO, Centers, Mission Di-

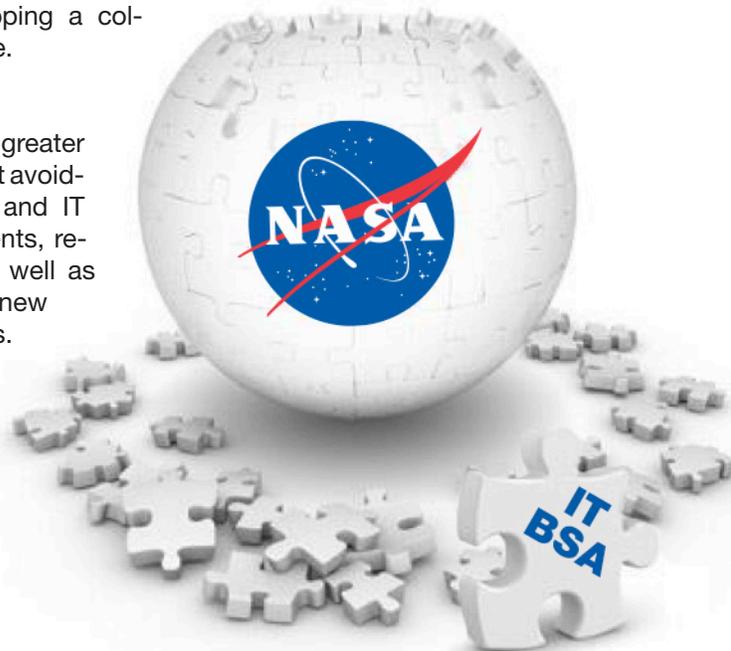
rectorates, and Functional Offices to provide oversight and decision making.

We recognize new and current leaders for stepping in to solve problems or taking deeper dives to gain a greater understanding of the environment and arrive at the best solutions. Current managers have allocated time and personnel to projects while juggling preexisting priorities; new leaders have risen into roles to guide the IT BSA process.

Our Customer

Lastly, thank you to information technology customers, in and out of the missions. Your feedback on our services and your needs enables IT to become your strategic partner. By adjusting how equipment and other requirements are sourced, NASA will reduce duplicative (and costly) contracts, save money, and still allow for unique solutions to unique problems. These savings and cost avoidances will be reinvested into services supporting the Agency's mission. Other changes, like enhanced security and easier pathways to collaboration, will be beneficial for years to come.

As implementation marches into its second year, we applaud all of those individuals who helped shape the IT BSA, from development to operation under a more insightful and efficient model.





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Decades of Multimedia Content Now Searchable in the Cloud

By Mary Phillips, WESTPrime Program Communications

Since NASA got its start in 1958, it has been making history with a mission focused on advancing technology and science through flight. For nearly six decades, images, videos, and audio files have been captured across the United States in disparate Center galleries.

Before the creation of the searchable library, NASA employees and citizens had difficulty finding content. Every major project had its own image gallery and curated galleries, meaning the searcher had to have some understanding of where a particular image might be located. For example, a space launch image would likely be at Kennedy Space Center's gallery. "From the perspective of being a good steward of the taxpayer, we owed it to our citizens to have a better citizen engagement experience by making the library available in one location," said Rodney Grubbs, NASA Imagery Experts Program Manager.

This project was significant. When the idea was pitched to NASA Headquarters leadership three years ago, one of the parameters was not to

invest in hardware sitting in racks that needed to be updated and upgraded. The Agency did not want to own any of the servers or hardware. Yet having access to secure cloud infrastructure that was certified for Government use created an opportunity to solve both the technical and storage challenges. The image library needed to be built on infrastructure that was not owned yet could take advantage of the cloud services, tools, and toolsets that came with a cloud architecture.

Balancing cost without compromising capability was a shared goal. "Building a cloud native application that dynamically scales is a 'first' for NASA and will result in a better user experience while reducing costs," said Ian Sturken, NASA Web and Cloud Services Program Manager.

The NASA Image and Video Library was unveiled to the public at the end of March 2017. Through the Website, external and internal users can search, discover, and download more than 140,000 files from across the Agency's

many missions in aeronautics, astrophysics, Earth science, and human spaceflight.

Multiple resolutions are available, with metadata associated with each image. There is also an application program interface (API) that allows automation of imagery uploads and gives visitors the ability to embed content in sites and applications. The public site runs on NASA's cloud native "infrastructure as code" technology, enabling on-demand use in the cloud.

"It was a huge undertaking and the Web Services Office through WESTPrime gave us a vehicle to go and solve this," said Rodney Grubbs. "Without it, there wasn't a way to do it. I couldn't go out on the street and do a Request for Proposal (RFP). It had to be done by someone within the NASA domain and had to be a secure way to manage and control it. Without the WESTPrime contract, I didn't have a way to do it," continued Grubbs.

The library can be found at: <https://images.nasa.gov>

OCIO Honors

The OCIO celebrates three employees on their recent extraordinary achievements in innovation.



Beth Beck, the Open Information Manager and Information Management Program Executive, was awarded a Ph.D. in planning, governance, and globalization this May by Virginia Polytechnic Institute and State University (Virginia Tech). Her dissertation, “The Spark That Ignites the Creative Idea: An Examination of the Group Practice of LAUNCH,” analyzed data from the joint sustainability program, LAUNCH, founded by NASA, the U.S. Department of State, the United States Agency for International Development (USAID), and Nike.

Beth’s study examines how tension and conflict generated by team collaboration can lead to innovative outcomes through the analysis of group interactions between LAUNCH team members over 5 years. Her findings are described using scientific metaphors from atomic physics and quantum mechanics, which sparked a quantum theory of social dynamics that applies to collaborative behaviors

exhibited in teams, as well as creativity evoked by disruptive social interactions. The conclusions, applicable to other group interactions—including ours—show that under a common goal, conflict can lead to shifting perspectives and innovation in problem solving.

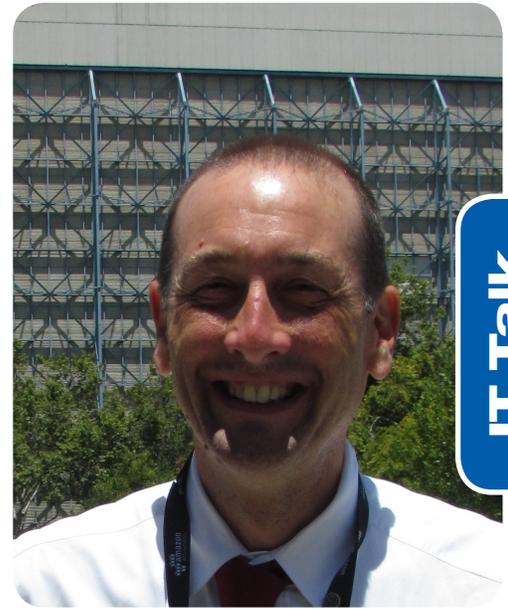
Beth is located at NASA Headquarters.



The Exceptional Achievement Medal for 2017, a prestigious Agency Honor Award, has been granted to Karen Petraska, the Program Executive for Computing Services in the Enterprise Services and Integration

Division. The medal was awarded “for outstanding leadership in developing the Enterprise Managed Cloud Computing program to facilitate secure and compliant adoption of cloud services for NASA customers.” Karen’s leadership has been instrumental in encouraging the use of the cloud for Agency data and services as well as consolidating data center functions.

The Exceptional Achievement Medal is awarded to civil servants whose work results in major achievements or significant mission support, is innovative, and fulfills NASA’s goals. Karen (also located at NASA Headquarters) will receive her medal at the Agency Honor Awards Ceremony in October.



Ian Sturken, the Web and Cloud Services Manager and Enterprise Application Architecture Co-Lead, received the Mission Excellence Enabler award during the 2017 AFCEA Bethesda InnovateIT Awards: Recognizing the Best in Government-wide InTIatives. He was nominated for his work with the Web Services Office (WSO) and WESTPrime team to address risk and security, requirements, payment strategies, and usage in cloud computing adoption at NASA.

Ian is located at NASA’s Ames Research Center.

Congratulations to Beth, Karen, and Ian on their accomplishments!

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